

Biodiversity: Maintaining the Balance
Classroom Program
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Grade: 5th

Subject: Importance of diversity of animals with different niches.

Theme: Different animals have different adaptations that allow the desert ecosystem to remain strong and healthy for all who live there.

Objectives: Students will be able to describe how energy flows through an ecosystem. Students will be able to predict consequences of what would happen with loss of native species and/or introduction of exotic species.

Curriculum: Science (K-12)17.0 Conservation – Students understand that humans have the unique ability to change their behavior based on ethical consideration for other organisms.

Science (5)4.1 Investigate and describe interrelationships and interdependence of organisms with each other and with their habitats.

Science (5)4.3 Explain how the sun is the primary source of energy and that living things get what they need to survive from their environment.

Vocabulary: Biodiversity – Bio, meaning life, and diversity, meaning difference. This is a collective term for all the living things within an ecosystem.

Food Chain - The path of energy flow from the sun to organisms through their food.

Endangered - Organism protected by the Endangered Species Act because of their extremely limited numbers. Fear of extinction.

Threatened - Organism protected by the ESA because of their dwindling populations. Fear of becoming endangered.

Herbivore - An organism that eats plants.

Carnivore - An organism that eats meat (insects count as meat).

Omnivore - An organism that eats both plants and meat.

Native - an organism that has evolved naturally in an ecosystem.

Exotic – An organism that has been introduced to a new ecosystem.

Endemic - Organisms found only in one location.

Niche - an organism's role in an ecosystem.

Activities: The ranger will start with a discussion naming a lot of desert animals in the Mojave desert, specifying which ones are native and/or endemic. This will proceed to examples of food chains found in our desert starting with the sun as the ultimate source of energy. Discuss how each species in the chain has a job to do (keep populations down, spread seeds, distribute energy, etc.) and explore scenarios when you remove some of the species. Discuss how humans may effect the food chains and the balance they create. Distinguish between extinct, endangered, and threatened using the Dodo, the California Condor, and the Desert Tortoise respectively as examples. What are some ways we can help or hurt animals?

Play the Onto the Desert card game to role-play a food web. Discuss why some animals may die or need to eat more than once to get enough energy. Explain why plants are worth more energy points than carnivores. The game can be repeated several times, time permitting.

Before the Ranger Arrives: Discuss local animals and plants. Where else do they live? What do they eat?